



100 Westminster Street, Suite 1500  
Providence, RI 02903-2319

p: 401-274-2000 f: 401-277-9600  
hinckleyallen.com

Adam M. Ramos  
aramos@hinckleyallen.com  
Direct Dial: 401-457-5164

September 11, 2018

**Via Electronic Mail and Hand Delivery**

Luly E. Massaro, Commission Clerk  
Rhode Island Public Utilities Commission  
89 Jefferson Boulevard  
Warwick, RI 02888

**RE: Docket 4755 – 2018 Energy Efficiency Program Plan  
Responses to Division Data Requests – Set 6**

Dear Ms. Massaro:

I have enclosed ten copies of National Grid's<sup>1</sup> responses to the sixth set of data requests issued by the Rhode Island Division of Public Utilities and Carriers (Division) in the above-referenced docket.

Thank you for your attention to this filing. If you have any questions concerning this matter, please contact me at 401-457-5164.

Very truly yours,

Adam M. Ramos  
Enclosures

cc: Docket 4755 Service List  
Jon Hagopian, Esq.

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<sup>1</sup> The Narragansett Electric Company d/b/a National Grid (National Grid or Company).

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.



\_\_\_\_\_  
Joanne M. Scanlon

September 11, 2018  
Date

**Docket No. 4755 - National Grid – Energy Efficiency Program Plan for 2018**  
**Docket No. 4756 - National Grid – 2018 System Reliability Procurement**  
**Report (SRP)**  
**Service list updated 7/9/18**

<b>Name/Address</b>	<b>E-mail Distribution List</b>	<b>Phone</b>
Raquel Webster, Esq. <b>National Grid</b> 280 Melrose St. Providence, RI 02907	<a href="mailto:Raquel.webster@nationalgrid.com">Raquel.webster@nationalgrid.com</a> ;	781-907-2121
	<a href="mailto:Joanne.scanlon@nationalgrid.com">Joanne.scanlon@nationalgrid.com</a> ;	
	<a href="mailto:Celia.obrien@nationalgrid.com">Celia.obrien@nationalgrid.com</a> ;	
	<a href="mailto:Rachel.henschel@nationalgrid.com">Rachel.henschel@nationalgrid.com</a> ;	
Jon Hagopian, Esq. <b>Division of Public Utilities and Carriers</b>	<a href="mailto:Jon.hagopian@dpuc.ri.gov">Jon.hagopian@dpuc.ri.gov</a> ;	401-784-4775
	<a href="mailto:Al.mancini@dpuc.ri.gov">Al.mancini@dpuc.ri.gov</a> ;	
	<a href="mailto:Macky.McCleary@dpuc.ri.gov">Macky.McCleary@dpuc.ri.gov</a> ;	
	<a href="mailto:Jonathan.Schrag@dpuc.ri.gov">Jonathan.Schrag@dpuc.ri.gov</a> ;	
	<a href="mailto:john.bell@dpuc.ri.gov">john.bell@dpuc.ri.gov</a> ;	
	<a href="mailto:Albert.DeMiranda@dpuc.ri.gov">Albert.DeMiranda@dpuc.ri.gov</a> ;	
Tim Woof Jennifer Kallay Synapse Energy Economics 22 Pearl Street Cambridge, MA 02139	<a href="mailto:twoolf@synapse-energy.com">twoolf@synapse-energy.com</a> ;	
	<a href="mailto:jkallay@synapse-energy.com">jkallay@synapse-energy.com</a> ;	
Marisa Desautel, Esq. ( <b>EERMC</b> ) Law Office of Marisa Desautel, LLC 55 Pine St. Providence, RI 02903	<a href="mailto:marisa@desautelesq.com">marisa@desautelesq.com</a> ;	401-477-0023
Mike Guerard, Optimal Energy	<a href="mailto:guerard@optenergy.com">guerard@optenergy.com</a> ;	
Mark E. LeBel, Esq. <b>Acadia Center</b> 31 Milk Street Suite 501 Boston, MA 02108	<a href="mailto:mlebel@acadiacenter.org">mlebel@acadiacenter.org</a> ;	617-742-0054 Ext. 104
	<a href="mailto:ENiedowski@acadiacenter.org">ENiedowski@acadiacenter.org</a> ;	
Carol Grant, Commissioner <b>Office of Energy Resources (OER)</b>	<a href="mailto:Carol.grant@energy.ri.gov">Carol.grant@energy.ri.gov</a> ;	
	<a href="mailto:Christopher.Kearns@energy.ri.gov">Christopher.Kearns@energy.ri.gov</a> ;	
	<a href="mailto:Danny.Musher@energy.ri.gov">Danny.Musher@energy.ri.gov</a> ;	
	<a href="mailto:Nicholas.Ucci@energy.ri.gov">Nicholas.Ucci@energy.ri.gov</a> ;	
	<a href="mailto:Becca.Trietch@energy.ri.gov">Becca.Trietch@energy.ri.gov</a> ;	
	<a href="mailto:Carrie.Gill@energy.ri.gov">Carrie.Gill@energy.ri.gov</a> ;	

Andrew Marcaccio, Esq. Dept. of Administration Division of Legal Services One Capitol Hill, 4 <sup>th</sup> Floor Providence, RI 02908	<a href="mailto:Andrew.Marcaccio@doa.ri.gov">Andrew.Marcaccio@doa.ri.gov</a> ;	401-222-8880
Larry Chretien, Executive Director <b>People's Power and Light</b>	<a href="mailto:Larry@massenergy.org">Larry@massenergy.org</a> ;	
<b>Original &amp; 9 copies file w/:</b> Luly E. Massaro, Commission Clerk Linda George, PUC Counsel Public Utilities Commission 89 Jefferson Blvd. Warwick, RI 02888	<a href="mailto:Luly.massaro@puc.ri.gov">Luly.massaro@puc.ri.gov</a> ;	401-780-2107
	<a href="mailto:Linda.george@puc.ri.gov">Linda.george@puc.ri.gov</a> ;	
	<a href="mailto:Alan.nault@puc.ri.gov">Alan.nault@puc.ri.gov</a> ;	
	<a href="mailto:Todd.bianco@puc.ri.gov">Todd.bianco@puc.ri.gov</a> ;	
	<a href="mailto:Margaret.hogan@puc.ri.gov">Margaret.hogan@puc.ri.gov</a> ;	
Frederick Sneesby Dept. of Human Services	<a href="mailto:Frederick.sneesby@dhs.ri.gov">Frederick.sneesby@dhs.ri.gov</a> ;	
Douglas W. Gablinske, Executive Director The Energy Council of RI (TEC-RI)	<a href="mailto:doug@tecri.org">doug@tecri.org</a> ;	
Kat Burnham, PPL	<a href="mailto:kat@ripower.org">kat@ripower.org</a> ;	

The Narragansett Electric Company  
d/b/a National Grid  
RIPUC Docket No. 4755  
In Re: 2018 Energy Efficiency Plan  
Notification of an Energy Efficiency Incentive Greater Than \$3,000,000  
Responses to the Division's Sixth Set of Data Requests  
Issued on August 16, 2018

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Division 6-1

Request:

Referring to the corrected benefit cost ratio filed on August 14 reflected in Division 1-2, the total incentive of \$7,242,000 now exceeds the net benefit calculated in the benefit cost analysis by over \$4 million. Does the Company believe it is reasonable to pay an incentive that now results in a negative societal benefit of that magnitude, or should the incentive be adjusted downward to reduce, wholly or in part, the \$4 million in net cost in order to be consistent with the principle of least cost procurement? Please explain the reasons for the Company's answer.

Response:

As shown in DIV 1-2 Corrected, the total benefits are equal to \$20,689,180. The incentive does not exceed the net benefit.

The Company offered an incentive of \$7,242,000 that is projected to create \$20,689,180 in net benefits. For more calculations, see data request response DIV 1-3 corrected.

The Narragansett Electric Company  
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Division 6-2

Request:

The corrected Attachment DIV 1-3, Navy CHP Savings calculation, still uses year 20 data that coincides with calendar years 2018 through 2037. Yet, the notification indicates that the CHP project will not be commissioned until 2021. Why did the Company not use the data that coincides with calendar years 2021 through 2040, to match the actual date of commissioning the unit? For illustrative purposes, please also provide an alternate BCA calculation that uses 2040 as year 20 and provide this on a spreadsheet similar to corrected Attachment DIV 1-3.

Response:

Custom energy efficiency projects, such as CHP, are screened for cost effectiveness based on the program year when the project is being considered for an incentive. That typically coincides with when construction begins. The Navy CHP project was screened in January 2018, with an expectation of beginning design, bid, and build of the CHP in 2018. The Company anticipates that economic benefits will begin to accrue in 2018. The system is anticipated to come online and the post inspection is anticipated to be completed in 2020. Therefore, the Company anticipates that energy, capacity, and other benefits will begin to accrue in 2020. Commissioning typically occurs one year after the system is online, and the Company anticipates that this will be completed in 2021.

For screening, the Company used the data that was available when the technical review was completed, and it coincided with when the project was anticipated to begin. Large, complex projects can experience unanticipated delays that affect the eventual implementation timeframe.

For illustrative purposes, the following is the BCR summary using a measure life period of 2021-2040 in 2018 dollars; the spreadsheet is attached as Attachment DIV 6-2.

The Narragansett Electric Company  
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Division 6-2, page 2

<b>Navy CHP 2018 BCR w/2021-2040 ML</b>		
	Project cost -->	\$ 17,500,000
Economic \$ benefits	\$ 14,000,000	
Electric \$ benefits	\$ 86,754,403	
Oil \$ benefits	\$ 16,931,008	
Gas \$ benefits	\$ (81,358,900)	
O&M \$ benefits	\$ (12,778,226)	
	Total benefits -->	\$ 23,548,285
	Total B/C ratio -->	1.35

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Division 6-3

Request:

Will there be a CIAC involved in this arrangement with the Navy relating to the referenced gas system upgrades?

- a) If yes, please state the total cost of the upgrades and provide a copy of the economic analysis, including all the calculations and assumptions used in determining the CIAC, if any, and provide a copy of any cost estimates that have been provided to the Navy or its contractor. If there is no CIAC, please explain why not.
- b) Please provide a description of the referenced gas system upgrades and the estimated cost and indicate the amount of cost included in the CIAC, if any.
- c) Was the cost of the gas system upgrades included as a cost in the BCA? If yes, please identify the amount included. If not, please explain why not.
- d) If there is a CIAC that includes a revenue assumption relating to the Navy's contribution, please provide all assumptions and workpapers showing how the revenue to be received from the Navy was calculated and identify the rate class in which the Navy will be served under the assumptions, usage assumptions, and rate assumptions used in the calculation.

Response:

There will be no CIAC involved in this arrangement with the Navy relating to the referenced gas system upgrades.

- a) There is no CIAC required because the expected gas distribution revenues associated with the CHP equipment cover the Company's investment in the required gas system upgrades.
- b) A gas system reinforcement and a new gas service line are required to accommodate the additional gas load requirements of the CHP equipment. The gas system reinforcement requires the installation of approximately 3,000 feet of 12-inch diameter 99-psig wrapped steel main in parallel with the existing 8-inch diameter 99-psig wrapped-steel main in Green End Avenue, extending from the existing 12-inch steel stub at the intersection with Compton View Drive to the existing 12-inch steel stub at the intersection with Aquidneck Avenue. In addition, a new 100-foot 12-inch gas

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Division 6-3, page 2

service line is required to serve the CHP equipment. The estimated capital cost for the system reinforcement and service line is \$746,437.

- c) The cost of the gas system upgrades was not included as a cost in the BCA. These costs are being offset by the incremental gas distribution revenues resulting in a zero CIAC for the customer, and therefore, do not impact the CHP project costs.
- d) Please see the Company's response to subsection (a). When the Company evaluated CIAC requirements, the CHP equipment was expected to consume approximately 5,337,310 therms annually, corresponding to \$720,354 in firm distribution revenue on Narragansett Electric Company Rate 24. Please see Attachment DIV 6-3-1 (Gas Bill & Margin Calculator) and Attachment DIV 6-3-2 (Rhode Island Gas CIAC Model) for workpapers related to the assumptions, usage assumptions, and rate assumptions used in the calculation of zero CIAC.



Rep Name	Thomas Dion
Date Prepared	7/25/2017
Purpose	Bill & Margin Calculator

Customer Info		
Name	BQ Energy llc	
Address	0 Simonpietri Dr CHP	
City/Town/Village	Newport	
Zip Code	02903	
Territory - Company	NE - RI_Gas	RI
Customer Type	Commercial & Industrial Non-Heating	
Customer Subcategory	Industrial Process	
Service Type	Delivery & Commodity Srvc	

Annual Hours (based on Load Claiming Tables)	800
Override Annual Hours (Optional)	

Project Dth / Hr	
------------------	--

Rate Class (Based on Customer Info)	Rate 24
Override Rate Class (Optional)	

Annual Therms	5,337,310
Override Annual Therms	5,337,310

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Number of Apartments/Units	
Annual Therms per Unit based on Equipment Selection	-

	Scenario 1			
	Load Shape (Therms)		Commodity Price (\$/Therm)	
	Sys Generated	Override	Default	Override
January	533,118	722,990	0.4525	
February	451,865	749,970	0.4525	
March	471,819	734,500	0.4525	
April	415,680	624,120	0.4525	
May	397,767	621,040	0.4525	
June	387,120	-	0.4525	
July	395,704	-	0.4525	
August	413,602	-	0.4525	
September	422,608	-	0.4525	
October	445,746	624,350	0.4525	
November	478,532	616,180	0.4525	
December	523,750	644,160	0.4525	
Total	5,337,310	5,337,310		

Load Factor	76.67%
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	Scenario 1			
	Delivery		Supply	
	Default	Override	Default	Override
Delivery Rate Adjustment (DRA / DSA)	-			
GRT/Surcharge	3.0928%		3.0928%	
MTA	0.0000%		0.0000%	
Sales Tax	7.0000%		7.0000%	

[illegible]


Rate Schedule

PEAK (Jan-Apr, Nov-Dec)	MADQ	26,785	
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Scenario 1				
Per Schedule			Override	
	Size	Rate	Size	Rate
Monthly Customer Charge		425.00		
Block - 1	End	0.0256		
Block - 2	-	-		
Block - 3	-	-		
Block - 4	-	-		
Block - 5	-	-		
Block - 6	-	-		

OFF-PEAK (May-Oct)	MADQ	26,785	
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Scenario 1				
Per Schedule			Override	
	Size	Rate	Size	Rate
Monthly Customer Charge		425.00		
Block - 1	End	0.0256		
Block - 2	-	-		
Block - 3	-	-		
Block - 4	-	-		
Block - 5	-	-		
Block - 6	-	-		

Residential/Multi-Family Equipment Installed	Appliance	Annual Usage (DTh)	Select (Yes/No)	Margin
Equipment #1		-		-
Equipment #2		-		-
Equipment #3		-		-
Equipment #4		-		-
Equipment #5		-		-
Equipment #6		-		-
Equipment #7		-		-
Equipment #8		-		-
Total		-	\$	-
		-	\$	720,354

MADQ	#N/A	
------	------	--


MADQ	#N/A	
------	------	--


% of total margin: 0%



Customer Info

Name	BQ Energy LLC
Address	63 Snowscent Dr Chp
City, State	Newport
Terminology - Company	NE - RI Gas
Customer Type	Commercial & Industrial Non-Heating
Customer Subcategory	Industrial Process
Service Type	Delivery & Commodity Svc
Annual Hours	800
Project Dth / W	-
Rate Class	Rate 24

Estimated Bill

	Units Consumed (Therms)	Customer Charge	Delivery Charge	Mass City		Demand Charge	Dist Adj Charge (DAC)	EE Program Charge	CDR Discount	Billing Charge	RI Data		GRT / GET	Delivery Sales Tax	Total Delivery Cost	Total Supply Cost	Total Bill	Average Cost per Therm	
				ROAF	LOAF						SGA / DBA	System Benefit Charge							Ric State Assessment *
January	722,990	430.17	18,508.54	-	-	48,212.36	11,929.91	35,209.61	-	-	-	-	-	3,535.00	6,248.38	126,982.42	960,980.77	486,962.40	0.67
February	749,970	396.67	18,189.23	-	-	48,212.36	12,374.51	36,523.54	-	-	-	-	-	3,609.47	8,422.10	128,737.87	974,947.13	503,085.00	0.67
March	734,900	430.17	18,803.20	-	-	48,212.36	12,119.25	35,770.15	-	-	-	-	-	3,567.34	8,323.80	127,235.17	964,625.28	493,860.55	0.67
April	624,120	425.00	15,977.47	-	-	48,212.36	10,287.88	30,394.84	-	-	-	-	-	3,256.81	7,599.51	116,163.89	911,529.17	427,693.05	0.69
May	621,040	430.17	15,818.62	-	-	48,212.36	10,247.16	30,244.85	-	-	-	-	-	3,248.72	7,580.31	115,871.02	909,991.78	426,862.80	0.69
June	-	425.00	-	-	-	48,212.36	-	-	-	-	-	-	-	3,058.25	3,509.91	59,051.52	-	59,051.52	-
July	-	430.17	-	-	-	48,212.36	-	-	-	-	-	-	-	3,058.88	3,510.91	59,067.14	-	59,067.14	-
August	-	430.17	-	-	-	48,212.36	-	-	-	-	-	-	-	3,058.88	3,510.91	59,067.14	-	59,067.14	-
September	-	425.00	-	-	-	48,212.36	-	-	-	-	-	-	-	3,058.25	3,509.91	59,051.52	-	59,051.52	-
October	624,150	430.17	15,983.36	-	-	48,212.36	10,101.78	30,405.85	-	-	-	-	-	3,218.01	7,602.04	116,202.55	911,641.97	427,846.52	0.69
November	616,180	425.00	15,776.31	-	-	48,212.36	10,166.97	30,007.97	-	-	-	-	-	3,214.61	7,547.48	115,368.63	907,585.82	423,914.53	0.69
December	644,160	430.17	16,490.50	-	-	48,212.36	10,628.64	31,170.99	-	-	-	-	-	3,313.84	7,711.84	118,186.74	921,532.12	439,718.86	0.68
Total	5,337,810	5,170.83	136,435.14	-	-	578,548.29	88,065.63	239,937.90	-	-	-	-	-	31,041.62	77,897.19	1,178,485.68	2,664,115.44	3,840,601.11	0.71995
Average (5 / Therms)	-	0.00977	0.02360	-	-	0.10460	0.01650	0.04479	-	-	-	-	-	0.00619	0.01444	0.22080	0.49951	0.71995	-

Average Energy Costs

\$/Therm

Summer	0.65794
Winter	0.67798
Average	0.71995

Prepared By: Thomas Olson  
Date Prepared: July 25, 2017  
Date Printed: July 25, 2017  
Version: use 4.02 as of 5/30/17  
Model Used: C:\Users\jlanth\Downloads\GasBillCalculator v20170530 (15).xlsx

This analysis is for illustrative purposes only. It is not intended to create a binding offer or enforceable agreement. The rates and prices cited herein are estimates only and subject to change.

For Internal use only:

Estimated Margins	Per Dth	Per Unit
Annual Dth	533,781.00	-
Gross Profit Margin	-	-
(GPM)/New Delivery Revenue (NDLR)	720,354.26	1.34966
Adjusted Gas Revenue (AGR)	715,182.42	1.33997
Net Revenue	-	-
Net Cost	-	-
Gross Profit Margin (GPM) =	Margin =	720,354.26



Customer Info

Name	BQ Energy Inc
Address	0 Simonpietri Dr CHP
City, State	Newport
Territory - Company	NE RI Gas
Customer Subcategory	0
Annual Hours	0
Project Dth / Hr	
Scenario-1 Rate Class	Rate 24
Scenario-1 Service Type	Delivery & Commodity Svc
Scenario-2 Rate Class	0
Scenario-2 Service Type	

Estimated Bill

Scenario - 1 (Rate Class = Rate 24)													
Units Consumed (Therms)	Customer Charge*	Delivery Charges	RDAF	LDAF	Demand Charges	Dist Adj Charges (DAC)	EE Program Charges	Billing Charge	Delivery Sales Tax	Total Delivery Cost	Total Supply Cost	Total Bill	Average Cost per Therm
January	722.990	439.17	18,508.54	-	-	48,212.36	11,929.34	35,209.61	-	8,248.38	126,082.42	160,880.0786	486,962.49
February	759.470	396.67	19,189.23	-	-	48,212.36	12,174.51	36,523.54	-	8,422.10	128,717.87	174,347.1262	503,085.90
March	734.500	439.17	18,803.20	-	-	48,212.36	12,119.25	35,770.15	-	8,323.80	127,235.27	166,625.2839	493,860.55
April	624.120	425.00	15,977.47	-	-	48,212.36	10,297.88	30,394.64	-	7,599.51	116,163.89	151,529.1657	427,693.06
May	621.040	439.17	15,898.62	-	-	48,212.36	10,247.16	30,244.65	-	7,580.15	115,871.02	149,991.7833	425,862.80
June	-	425.00	-	-	-	48,212.36	-	-	-	3,509.91	53,651.52	-	53,651.52
July	-	439.17	-	-	-	48,212.36	-	-	-	3,510.93	53,667.14	-	53,667.14
August	-	439.17	-	-	-	48,212.36	-	-	-	3,510.93	53,667.14	-	53,667.14
September	-	425.00	-	-	-	48,212.36	-	-	-	3,509.91	53,651.52	-	53,651.52
October	624.350	439.17	15,983.36	-	-	48,212.36	10,301.78	30,405.85	-	7,603.04	116,202.55	151,643.9701	427,846.52
November	616.180	425.00	15,774.21	-	-	48,212.36	10,166.97	30,007.97	-	7,547.48	115,368.61	149,565.9189	422,934.93
December	644.160	439.17	16,490.50	-	-	48,212.36	10,628.64	31,270.59	-	7,721.84	118,186.74	151,532.1210	439,718.86
Total	5,337.310	5,170.83	136,633.54	-	-	578,548.29	88,065.52	299,387.00	-	77,997.19	1,178,485.48	2,664,115.44	3,842,601.11
Average (\$ / Therm)		0.00097	0.02560	-	-	0.10840	0.01650	0.04870	-	0.01444	0.22080	0.49915	0.71995

Scenario - 2 (Rate Class = 0)													
Units Consumed (Therms)	Customer Charge*	Delivery Charges	RDAF	LDAF	Demand Charges	Dist Adj Charges (DAC)	EE Program Charges	Billing Charge	Delivery Sales Tax	Total Delivery Cost	Total Supply Cost	Total Bill	Average Cost per Therm
January	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
February	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
March	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
April	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
May	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
June	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
July	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
August	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
September	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
October	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
November	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
December	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
Total	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	-	#N/A	#N/A	#N/A	#N/A
Average (\$ / Therm)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Average Energy Costs

	Scenario 1	Scenario 2
Summer	0.49915	#N/A
Winter	0.49915	#N/A
Average	0.49915	#N/A

Estimated Annual Savings\* #N/A

Prepared By: Thomas Dion  
Date Prepared: July 25, 2017  
Date Printed: July 25, 2017  
Version: sion 4-01 on 6/5/2017  
Model Used: C:\Users\jdion\Downloads\GasBilCalculator v20170530 (15).xls

\* Based on a baseline:  
Annual Usage = 5,337,310 therms; Rate Class = Rate 24  
your facility could save approximately  
\$N/A

This analysis is for illustrative purposes only. It is not intended to create a binding offer or enforceable agreement. The rates and prices used herein are estimates only and subject to change.

For Internal use only:

Estimated Margins						
	Per Dth			Per Unit		
	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
Annual Dth	533,731.00	#N/A			-	-
Discrete Margin/ New Delivery Revenue (NDR)	720,354.26	#N/A	1.34966	#N/A	-	-
Discrete AGR	715,183.42	#N/A	1.33997	#N/A	-	-
RPC Margin		#N/A				
RPC AGR		#N/A				



Customer Info

Name	BQ Energy LLC
Address	0 Simonpietri Dr CHP
City, State	Newport
Territory - Company	NE - RI_Gas
Customer Type	Commercial & Industrial Non-Heating
Customer Subcategory	0
Service Type	Delivery & Commodity Svc
Project Dth / Hr	-
Fuel/Oil Type	0
Annual Hours	0
Rate Class	Rate 24

Estimated Oil Bill

	Oil Consumed (Gallons)	Oil Unit Price	Oil Bill
January	#N/A	#N/A	#N/A
February	#N/A	#N/A	#N/A
March	#N/A	#N/A	#N/A
April	#N/A	#N/A	#N/A
May	#N/A	#N/A	#N/A
June	#N/A	#N/A	#N/A
July	#N/A	#N/A	#N/A
August	#N/A	#N/A	#N/A
September	#N/A	#N/A	#N/A
October	#N/A	#N/A	#N/A
November	#N/A	#N/A	#N/A
December	#N/A	#N/A	#N/A
Total	#N/A		#N/A
Average (\$ / Therm)			

Estimated Annual Savings\* #N/A

Prepared By: Thomas Dion  
Date Prepared: July 25, 2017  
Date Printed: July 25, 2017  
Version: sion 4-01 as of 5/30/17  
Model Used: C:\Users\dionth\Downloads\GasBillCalculator v20170530 (15).xlsj

\* Based on a baseline annual oil consumption of  
#N/A  
your facility could save approximately  
#N/A  
after a conversion to natural gas at rate class - Rate 24

This analysis is for illustrative purposes only. it is not intended to create a binding offer or enforceable agreement. The rates and prices used herein are estimates only and subject to change.

For Internal use only:

Estimated Margins	Per Dth	Per Unit
Annual Dth	533,731.00	-
Discrete Margin/New Delivery Revenue (NDR)	720,354.26	1.34966
Discrete AGR	715,183.42	1.33997
RPC Margin	-	-
RPC AGR	-	-

Units Consumed	Customer Charge *	Delivery Charges	RDAF	LDAF	Demand Charges	Dist Adj Charges (DAC)	EE Program Charges	EDZR Discount	Billing Charge	DSA / DRA	System Benefit Charge	Inc State Assessment ^	GRT / GET	MTA Surcharge (DNY Only)	Delivery Sales Tax	Total Delivery Cost	Total Supply Cost	Total Bill	Average Cost per Therm
722,990	439.17	18,508.54	-	-	48,212.36	11,929.34	35,209.61	-	-	-	-	-	3,535.02	-	8,248.38	126,082.42	360,880.0736	486,962.49	0.6735
749,970	396.67	19,199.23	-	-	48,212.36	12,374.51	36,523.54	-	-	-	-	-	3,609.47	-	8,422.10	128,737.87	374,347.1262	503,085.00	0.6708
734,500	439.17	18,803.20	-	-	48,212.36	12,119.25	35,770.15	-	-	-	-	-	3,567.34	-	8,323.80	127,235.27	366,625.2839	493,860.55	0.6724
624,120	425.00	15,977.47	-	-	48,212.36	10,297.98	30,394.64	-	-	-	-	-	3,256.93	-	7,599.51	116,163.89	311,529.1657	427,693.05	0.6853
621,040	439.17	15,898.62	-	-	48,212.36	10,247.16	30,244.65	-	-	-	-	-	3,248.72	-	7,580.35	115,871.02	309,991.7853	425,862.80	0.6857
-	425.00	-	-	-	48,212.36	-	-	-	-	-	-	-	1,504.25	-	3,509.91	53,651.52	-	53,651.52	-
-	439.17	-	-	-	48,212.36	-	-	-	-	-	-	-	1,504.68	-	3,510.93	53,667.14	-	53,667.14	-
-	439.17	-	-	-	48,212.36	-	-	-	-	-	-	-	1,504.68	-	3,510.93	53,667.14	-	53,667.14	-
-	425.00	-	-	-	48,212.36	-	-	-	-	-	-	-	1,504.25	-	3,509.91	53,651.52	-	53,651.52	-
624,350	439.17	15,983.36	-	-	48,212.36	10,301.78	30,405.85	-	-	-	-	-	3,258.01	-	7,602.04	116,202.55	311,643.9701	427,846.52	0.6853
616,180	425.00	15,774.21	-	-	48,212.36	10,166.97	30,007.97	-	-	-	-	-	3,234.63	-	7,547.48	115,368.61	307,565.9189	422,934.53	0.6864
644,160	439.17	16,490.50	-	-	48,212.36	10,628.64	31,370.59	-	-	-	-	-	3,313.64	-	7,731.84	118,186.74	321,532.1210	439,718.86	0.6826
5,337,310	5,170.83	136,635.14	-	-	578,548.29	88,065.62	259,927.00	-	-	-	-	-	33,041.62	-	77,097.19	1,178,485.68	2,664,115.44	3,842,601.12	0.7200
	0.00097	0.02560	-	-	0.10840	0.01650	0.04870	-	-	-	-	-	0.00619	-	0.01444	0.22080	0.49915	0.71995	

**Rhode Island Gas CIAC Model**

version: 2-01 as of: 5/30/2017 v20170530

Company Representative (required):

Thomas Dion

Customer Name (required):

BQ Energy llc

Customer Street (required):

0 Simonpietri Dr

Customer Town (required):

Newport

Customer Zip Code (required):

02903

Scenario:

New CHP Project

Expected In-Service Date (required):

9/1/2019

First Year of Service:

2019

GridForce ID:

Maximo Number:

STORMS ID:

Work Order No:

Service

Main

**INITIAL SCREENING**

Is this an upgrade to an existing service?

No

Engineering  
Estimate  
Provided?  
(Yes/No)

No

Engineering  
Estimate  
Required

Not Required

**EXPLANATION/NOTES**

Is this a meter relocation for the  
convenience of the customer?

No

No

Sometimes

Is this a main extension?

No

No

Sometimes

Is this an EBBO?

No

No

Not Required

EBBO: The Customer is having a third-party perform the excavation.

Is the main portion on private property?

No

EBBO: An EBBO credit can only be applied to excavation on private property.

Are there system reinforcements?

Yes

Yes

Yes

System reinforcements include new main or main replacements (increased pipe size). An engineering estimate is required.

Are there extenuating circumstances?

No

No

Yes

Extenuating circumstances include but are not limited to: excessive ledge, bridge and railroad crossings, DEM permits and permit restrictions, state roads, restoration requirements, concrete base roadways, new roadways or newly paved roadways and unusual landscaping, or upgrading an existing service for added load.

Is this an encumbered main situation?

No

No

Not Required

If this is an encumbered main, then if this main became encumbered within the last five (5) years, a refund may be due to the original Applicant(s).

Are there multiple other potential opportunities  
on the encumbered main?

No

Are there multiple premises that are  
classified as Driver?

No

If multiple premises are associated with the Driver, please provide the associated addresses and main footages below.

**SUMMARY OF RESULTS**

Total Customer Contribution (including taxes):	\$	-	Total Plant:	\$	746,437	NPV: at 5 yrs:	\$	779,263
Average Customer Contribution per Meter:	\$	-	Total Encumbered Main Costs:	\$	-	at 10 yrs:	\$	1,435,206
Encumbered Main Customer Contribution (including taxes):	\$	-	Total Unencumbered Main Costs:	\$	724,499	at 15 yrs:	\$	1,892,630
			Total Service Costs:	\$	21,938	at 20 yrs:		#N/A
			Check:	\$	-			

**ENCUMBERED MAIN**

If the Driver incorporates multiple premises, please provide the list of addresses and footage information from the connect point, including the premise farthest from the connection point.

**Encumbered Main Driver List**

Count	R/NR	Street No.	Street Name	Customer Name	Annual Volume	Margin/NDR (\$/DTh)	Service Line Footage	Service Line Cost per Ft	Main Footage	Footage Apportionment	Footage Based Encum Main Customer Contribution	Load Apportionment	Load Based Encum Main Customer Contribution	Composite Apportionment	Composite Encum Main Customer Contribution	Revenue Apportionment	Annual Revenue	Net Revenue Available for Service Line CIAC	Cost of Service Line Footage	Service Line Related CIAC	Service Line Adjustment
1								\$ 33.45		0%	\$ -	0%	\$ -	0%	\$ -	0%	\$ -	\$ -	\$ -	\$ -	\$ -
2								\$ 33.45		0%	\$ -	0%	\$ -	0%	\$ -	0%	\$ -	\$ -	\$ -	\$ -	\$ -
3								\$ 33.45		0%	\$ -	0%	\$ -	0%	\$ -	0%	\$ -	\$ -	\$ -	\$ -	\$ -
4								\$ 33.45		0%	\$ -	0%	\$ -	0%	\$ -	0%	\$ -	\$ -	\$ -	\$ -	\$ -
5								\$ 33.45		0%	\$ -	0%	\$ -	0%	\$ -	0%	\$ -	\$ -	\$ -	\$ -	\$ -
6								\$ 33.45		0%	\$ -	0%	\$ -	0%	\$ -	0%	\$ -	\$ -	\$ -	\$ -	\$ -

Printed: 7/25/2017 11:36 AM

Service Line CIAC Interim Calculation	Adjusted Service Line Related CIAC
\$ -	\$ -
\$ -	\$ -
\$ -	\$ -
\$ -	\$ -
\$ -	\$ -
\$ -	\$ -
\$ -	\$ -



\$	=
\$	=
\$	=
\$	=
\$	=
\$	=

[illegible]

## Rhode Island Gas CIAC Model version 2-01

Company Representative: Thomas Dion

Customer Name: BQ Energy llc  
Customer Street: 0 Simonpietri Dr  
Customer Town: Newport  
Customer Zip Code: 02903

Scenario: New CHP Project

Expected In-Service Date: 9/1/2019  
First Year of Service: 2019

GridForce ID:  
Maximo Number:

STORMS ID:

SUMMARY OF RESULTS		
Total Customer Contribution:	\$	-
Avg Contribution per Meter:	\$	-
Avg Cust Contrib per Foot:	\$	-
Avg Cust Contrib per Unencum Ft:	\$	-
Net Present Value at 15 years:	\$	1,892,630
Capital Costs - Total Plant:	\$	746,437
Capital Costs - Encumbered Main:	\$	-
Capital Costs - Svc & Unencum Main:	\$	746,437
Calculated Encum Main Cust Contrib:	\$	-
Encumbered Main Contrib per Main Ft:	\$	-
Cust Contrib for Svc & Unencum Mn:	\$	-
Cust Contrib for Svc & Unenc Mn/Ft:	\$	-
Reimbursement to Original Driver(s):	\$	-

### ENCUMBERED MAIN EXTENSION FOOTAGE (feet)

2015 2016 2017 2018 2019 2020 2021

If there are multiple customers, input the length of the longest line for each pipe size category. You can input multiple lines over multiple years. Input only the portion subject to encumbrance here.

<2" plastic  
2" plastic  
2"-4" plastic  
6"-8" plastic

Total Loaded Capital (including burdens)

Extraordinary Items

Reinforcements

### COSTS SOLELY FOR CUSTOMERS' BENEFIT

#### SERVICE LINE INFORMATION

2015 2016 2017 2018 2019 2020 2021

Number of services to be installed:

Based on customer count

Override

0 0 0 1 0 0 0

#### TOTAL SERVICE LINE FOOTAGE (feet)

Please input the total service line length for each pipe size. If there are multiple lines in the same pipe size category, please add them together and input the total.

<2" plastic  
2" plastic  
2"-4" plastic  
6"-8" plastic

200

**UNENCUMBERED MAIN FOOTAGE (feet)**

Input the portion **not subject to encumbrance here**. If there are multiple customers, input the length of the longest line for each pipe size category. You can input multiple lines over multiple years.

<2" plastic  
2" plastic  
2"-4" plastic  
6"-8" plastic

**EBBO Credit**

\$ - \$ - \$ - \$ - \$ - \$ - \$ -

EBBO Credit Override

**Total Loaded Capital (including burdens)**

**Extraordinary Items**

**Reinforcements**

\$724,499

**CUSTOMER INFORMATION**

What type(s) and number(s) of customer(s)?

2015 2016 2017 2018 2019 2020 2021

Residential

- - - - - - -

Conversion

New Homes XXL Large (4500 sqft)

New Homes XL Large (3500 sqft)

New Homes Large (2400 sqft)

New Homes Med (1800 sqft)

New Homes Small (1200 sqft)

Apartment/Condo Small

Apartment/Condo Large

Commercial & Industrial (C&I)

- - - 1 - - -

Rate 21 (Small C&I)

Rate 22 (Medium C&I)

Rate 23 (Large C&I Low Load)

Rate 24 (XL C&I High Load)

Rate 33 (Large C&I Low Load)

Rate 34 (XL C&I Low Load)

1

**LOAD INFORMATION (MMBTUs)**

Enter incremental unit volumes added per year per customer from the Gas Bill & Margin Calculator.

	2015	2016	2017	2018	2019	2020	2021
Residential (total)	-	-	-	-	-	-	-
Conversion							
New Homes XXLarge (4500 sqft)							
New Homes XLarge (3500 sqft)							
New Homes Large (2400 sqft)							
New Homes Med (1800 sqft)							
New Homes Small (1200 sqft)							
Apartment/Condo Small							
Apartment/Condo Large							
Commercial & Industrial (C&I) (total)	-	-	-	533,731	-	-	-
Rate 21 (Small C&I)							
Rate 22 (Medium C&I)							
Rate 23 (Large C&I Low Load)							
Rate 24 (XL C&I High Load)				533,731			
Rate 33 (Large C&I Low Load)							
Rate 34 (XL C&I Low Load)							

**MARGIN DATA (per Dekatherm)**

Enter unit margin data from the Gas Bill & Margin Calculator for each applicable customer class.

	2015	2016	2017	2018	2019	2020	2021
Residential (weighted average) \$	- \$	- \$	- \$	- \$	- \$	- \$	-
Conversion							
New Homes XXLarge (4500 sqft)							
New Homes XLarge (3500 sqft)							
New Homes Large (2400 sqft)							
New Homes Med (1800 sqft)							
New Homes Small (1200 sqft)							
Apartment/Condo Small							
Apartment/Condo Large							
Commercial & Industrial (C&I) (weighted average)	-	-	-	1.3500	-	-	-
Rate 21 (Small C&I)							
Rate 22 (Medium C&I)							
Rate 23 (Large C&I Low Load)							
Rate 24 (XL C&I High Load)				\$ 1.3500			
Rate 33 (Large C&I Low Load)							
Rate 34 (XL C&I Low Load)							



Scenario: **New CHP Project**

### Net Present Value Analysis

Capital Contribution	\$0
----------------------	-----

BQ Energy llc, 0 Simonpietri Dr, Newport, RI, 02903

Rate Base	
-----------	--

**BQ Energy llc, 0 Simonpietri Dr, Newport, RI, 02903**

Rhode Island Gas CIAC Model version 2-01  
Financials

Customer: BQ Energy Inc, 0 Simonpietri Dr, Newport, RI, 02903

Scenario: New CHP Project

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	1	15 Year Total	
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2	Dollars	Avg \$/Ft
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040			
Income Tax Calculation																													
Return Requirement	\$ 0	\$ 0	\$ 0	\$ 0	\$ 48,659	\$ 46,467	\$ 44,350	\$ 42,302	\$ 40,318	\$ 38,393	\$ 36,523	\$ 34,704	\$ 32,892	\$ 31,081	\$ 29,270	\$ 27,458	\$ 25,647	\$ 23,836	\$ 22,024	\$ 20,213	\$ 18,402	\$ 16,590	\$ 14,779	\$ 12,968	\$ 0	\$ 0	\$ 424,960	\$ 2,124.80	
Less: Interest Charges	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	\$ 0.00
Weighted Cost of Debt	\$ 0	\$ 0	\$ 0	\$ 0	\$ 18,479	\$ 17,647	\$ 16,843	\$ 16,065	\$ 15,311	\$ 14,580	\$ 13,870	\$ 13,179	\$ 12,491	\$ 11,803	\$ 11,116	\$ 10,428	\$ 9,740	\$ 9,052	\$ 8,364	\$ 7,676	\$ 6,988	\$ 6,300	\$ 5,612	\$ 4,925	\$ 0	\$ 0	\$ 161,384	\$ 806.92	
Interest Charges	\$ 0	\$ 0	\$ 0	\$ 0	\$ 30,180	\$ 28,821	\$ 27,508	\$ 26,237	\$ 25,007	\$ 23,813	\$ 22,653	\$ 21,524	\$ 20,401	\$ 19,277	\$ 18,154	\$ 17,031	\$ 15,907	\$ 14,784	\$ 13,660	\$ 12,537	\$ 11,413	\$ 10,290	\$ 9,166	\$ 8,043	\$ 0	\$ 0	\$ 263,576	\$ 1,317.88	
Net Income	\$ 0	\$ 0	\$ 0	\$ 0	\$ 30,180	\$ 28,821	\$ 27,508	\$ 26,237	\$ 25,007	\$ 23,813	\$ 22,653	\$ 21,524	\$ 20,401	\$ 19,277	\$ 18,154	\$ 17,031	\$ 15,907	\$ 14,784	\$ 13,660	\$ 12,537	\$ 11,413	\$ 10,290	\$ 9,166	\$ 8,043	\$ 0	\$ 0	\$ 263,576	\$ 1,317.88	
Taxable Income base	\$ 0	\$ 0	\$ 0	\$ 0	\$ 30,180	\$ 28,821	\$ 27,508	\$ 26,237	\$ 25,007	\$ 23,813	\$ 22,653	\$ 21,524	\$ 20,401	\$ 19,277	\$ 18,154	\$ 17,031	\$ 15,907	\$ 14,784	\$ 13,660	\$ 12,537	\$ 11,413	\$ 10,290	\$ 9,166	\$ 8,043	\$ 0	\$ 0	\$ 263,576	\$ 1,317.88	
Taxable Income Base Factor:	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	\$ 0.01
Taxable Income	\$ 0	\$ 0	\$ 0	\$ 0	\$ 46,431	\$ 44,340	\$ 42,320	\$ 40,365	\$ 38,472	\$ 36,635	\$ 34,851	\$ 33,114	\$ 31,386	\$ 29,658	\$ 27,929	\$ 26,201	\$ 24,472	\$ 22,744	\$ 21,016	\$ 19,287	\$ 17,559	\$ 15,831	\$ 14,102	\$ 12,374	\$ 0	\$ 0	\$ 405,501	\$ 2,027.50	
State Income Tax	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0.00
Federal Income Tax	\$ 0	\$ 0	\$ 0	\$ 0	\$ 16,251	\$ 15,519	\$ 14,812	\$ 14,128	\$ 13,465	\$ 12,822	\$ 12,198	\$ 11,590	\$ 10,985	\$ 10,380	\$ 9,775	\$ 9,170	\$ 8,565	\$ 7,960	\$ 7,355	\$ 6,751	\$ 6,146	\$ 5,541	\$ 4,936	\$ 4,331	\$ 0	\$ 0	\$ 141,925	\$ 709.63	
Income Tax Calculation - Cash																													
New Delivery Revenue (NDR)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 720,537	\$ 0	\$ 0	\$ 7,925,905	\$ 39,629.53	
less:																													
O&M and A&G Expense	-	-	-	-	57	59	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	\$ 177	\$ 0.89
Property Taxes	-	-	-	-	12,646	12,774	12,903	12,903	13,031	13,159	13,287	13,416	13,544	13,672	13,801	13,929	14,057	14,186	14,314	14,442	14,571	14,699	14,827	14,955	-	-	\$ 132,233	\$ 661.17	
Uncollectible Expense	-	-	-	-	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	22,913	-	-	\$ 252,044	\$ 1,260.22
Interest Expense	-	-	-	-	36,958	36,814	36,669	36,524	36,379	36,234	36,089	35,944	35,799	35,654	35,509	35,364	35,219	35,074	34,929	34,784	34,639	34,494	34,349	34,204	-	-	\$ 172,500	\$ 862.50	
Tax Depreciation	-	-	-	-	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	243,525	-	-	\$ 2,624,977	\$ 13,124.88
Pre-Tax Income	-	-	-	-	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	417,084	-	-	\$ 6,843,975	\$ 34,219.87
State Income Taxes	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0.00
Taxable Income	\$ 0	\$ 0	\$ 0	\$ 0	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 417,084	\$ 0	\$ 0	\$ 6,843,975	\$ 34,219.87	
Federal Income Tax	\$ 0	\$ 0	\$ 0	\$ 0	\$ 145,979	\$ 141,635	\$ 137,291	\$ 132,947	\$ 128,603	\$ 124,259	\$ 119,915	\$ 115,571	\$ 111,227	\$ 106,883	\$ 102,539	\$ 98,195	\$ 93,851	\$ 89,507	\$ 85,163	\$ 80,819	\$ 76,475	\$ 72,131	\$ 67,787	\$ 63,443	\$ 59,099	\$ 0	\$ 0	\$ 2,395,391	\$ 11,976.96
Tax Depreciation Expense																													
Main	\$ 0	\$ 0	\$ 0	\$ 0	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 236,368	\$ 0	\$ 0	\$ 2,624,977	\$ 13,124.88
Service	-	-	-	-	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	7,157	-	-	\$ 15,429	\$ 77.15
Meter																													
Meter Connection	\$ 0	\$ 0	\$ 0	\$ 0	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 0	\$ 0	\$ 2,624,977	\$ 13,124.88
Total Tax Depreciation	\$ 0	\$ 0	\$ 0	\$ 0	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 243,525	\$ 0	\$ 0	\$ 2,624,977	\$ 13,124.88
Book Depreciation	\$ 0	\$ 0	\$ 0	\$ 0	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 24,406	\$ 0	\$ 0	\$ 268,469	\$ 1,342.35
Deferred Taxes	\$ 0	\$ 0	\$ 0	\$ 0	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ 0	\$ 0	\$ (89,778)	\$ (448.89)
Accumulated Deferred Taxes	\$ 0	\$ 0	\$ 0	\$ 0	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ (76,692)	\$ 0	\$ 0	\$ (89,778)	\$ (448.89)

Rhode Island Gas CIAC Model version 2-01  
Encumbered Main Financials

Customer: BQ Energy LLC, 0 Simonpietri Dr, Newport, RI, 02903

Scenario: Excludes Service Line and Unencumbered Main Costs

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	1	15 Year Total	
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2	Dollars	\$/ft
Cost of Service (COS)																											3		
New Delivery Revenue (NDR)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	4	\$ 0	\$0.00
O&M and A&G Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	\$ 0	\$0.00
Uncollectible Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	\$ 0	\$0.00
Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	\$ 0	\$0.00
Call Out Fee	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	\$ 0	\$0.00
Property Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	\$ 0	\$0.00
State Income Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	\$ 0	\$0.00
Federal Income Tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	\$ 0	\$0.00
Return Requirement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	\$ 0	\$0.00
Total Cost of Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	\$ 0	\$0.00
Revenues in Excess of Cost of Service	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	\$ 0	\$0.00
Present Value of Revenues	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	15	\$ 0	\$0.00
Cumulative Present Value	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	\$ 0	\$0.00
Net Present Value Analysis																											17		
Cash Inflow Analysis																											18		
Debt	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	19	\$ 0	\$0.00
Capital Contribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	\$ 0	\$0.00
New Delivery Revenue (NDR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	\$ 0	\$0.00
Total Inflows	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	22	\$ 0	\$0.00
Cash Outflow Analysis	0																										23		
Plant	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	24	\$ 0	\$0.00
O&M Working Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	\$ 0	\$0.00
O&M and A&G Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	\$ 0	\$0.00
Uncollectible Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	\$ 0	\$0.00
Property Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	\$ 0	\$0.00
State Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	\$ 0	\$0.00
Federal Income Tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	\$ 0	\$0.00
Interest Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	\$ 0	\$0.00
Sinking Fund Payment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	\$ 0	\$0.00
Total Outflows	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	33	\$ 0	\$0.00
Net Inflow (Outflow)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	34	\$ 0	\$0.00
Present Value of Revenues	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	35	\$ 0	\$0.00
Cumulative Present Value	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	36	\$ 0	\$0.00
Cumulative IRR																											37		
Capital Contribution		\$ 0																									38		
Net Present Value	\$	-																									39		
IRR on Investment																											40		

BQ Energy LLC, 0 Simonpietri Dr, Newport, RI, 02903

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Revenue																										
New Delivery Revenue (NDR)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Uncollectible Expense	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
O&M and A&G Expense																										
Operations & Maintenance (O&M) Expense	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Administrative & General (A&G) Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total O&M and A&G Expense	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0



Depreciation Expense																											
Main	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service																											
Meter																											
Meter Connection																											
Total Book Depreciation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rate Base																											
Plant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Depreciation Reserve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Plant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M Working Capital	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Accumulated Deferred Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rate Base	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Weighted Cost of Capital	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%	7.54%
Return Requirement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Plant																											
Capital Investment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Customer Contribution	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Plant Investment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BG Energy Inc, 0 Simonpietri Dr, Newport, RI, 02903																											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
Income Tax Calculation																											
Return Requirement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Less: Interest Charges																											
Weighted Cost of Debt	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%	2.86%
Interest Charges	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net Income	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Taxable Income base	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Taxable Income Base Factor:	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385	1.5385
Taxable Income	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
State Income Tax	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal Income Tax	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Income Tax Calculation - Cash																											
New Delivery Revenue (NDR)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
less:																											
O&M and A&G Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Property Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uncollectible Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Expense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tax Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Tax Income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
State Income Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Taxable Income	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal Income Tax	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Tax Depreciation Expense																											
Main	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service																											
Meter																											
Meter Connection																											
Total Tax Depreciation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Book Depreciation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Deferred Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Accumulated Deferred Taxes	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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d/b/a National Grid  
RIPUC Docket No. 4755  
In Re: 2018 Energy Efficiency Plan  
Notification of an Energy Efficiency Incentive Greater Than \$3,000,000  
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Issued on August 16, 2018

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Division 6-4

Request:

Referring to the response to Division 3-3, the response states:

"There is no pipeline capacity available for the addition of the proposed CHP unit during design peak days. However, the Company does not anticipate a capacity risk from the addition of the proposed CHP unit, so long as the Navy agreed to cease CHP equipment operation on days on which weather conditions are colder than 52 heating degree days (HDD) (an average of 3.4 days per year). Please refer to Attachment DIV 2-4 for a copy of this analysis. The Company currently is negotiating with the Navy and is optimistic that it will agree to this requirement. If the Navy and the Company are not able to reach agreement on this requirement, then the Navy and the Company will explore other options for the project, but in no event will the Company purchase additional interstate pipeline capacity for the project. As such, the Company does not estimate a capacity risk as a result of the project."

- a) Is it the Company's intention to enter into a legally binding incentive payment commitment to the Navy's contractor before obtaining a legally binding commitment from the Navy through which the Navy agrees to cease CHP equipment operation on days on which weather conditions are colder than 52 heating degree days? If so, please explain why the Company believes it is prudent to do so, given the risk that the Company and the Navy might not be able to reach agreement on this requirement?
- b) Would the Company object to a condition that any incentive commitment to the Navy's contractor is contingent upon (i) the Company obtaining an agreement with the Navy that ensures the CHP will not operate when weather conditions are colder than 52 heating degree days and (ii) the agreement is reviewed and approved by the Division and/or the Commission prior to payment being made? If the Company would object to either of these conditions, please explain why.
- c) Please identify the types of options the Company would consider taking to ensure that additional pipeline capacity does not need to be purchased for this project, in the event an agreement cannot be reached with the Navy.
- d) When did the "negotiations" referenced in the response commence with the Navy?

Division 6-4, page 2

Request: (cont.)

- e) Please provide an explanation for the basis of the Company's confidence that the Navy will agree to the condition not to operate the CHP unit when weather conditions are colder than 52 heating degree days.
- f) Under which rate schedule will the Navy be served?

Response:

- a) It is not the Company's intention to enter into a legally binding incentive payment commitment to the Navy's contractor before obtaining a legally binding commitment from the Navy or the Navy's contractor through which either the Navy or the Navy's contractor agree to cease CHP equipment operation on days on which weather conditions are colder than 52 heating degree days.
- b) The Company would not object to a condition that any incentive commitment to the Navy's contractor is contingent upon the Company obtaining an agreement with the Navy or the Navy's contractor that ensures that the CHP will not operate when weather conditions are colder than 52 heating degree days. The Company, however, does object to the condition that the agreement is reviewed and approved by the Division and/or the Commission prior to any payment being made. The Company does not believe that either Division or Commission approval is required for a standard Commercial Gas Service/Main Agreement incorporating the Rhode Island Gas Tariff with a negotiated firm gas supply provision based on HDD.
- c) The negotiated firm service provision based on a customized HDD level is a form of "non-pipe alternative" (NPA), which would allow the Company to avoid the purchase of additional pipeline capacity (and the associated pipeline infrastructure projects which would be required). If an agreement cannot be reached with either the Navy or the Navy's contractor regarding firm service for the CHP equipment based on the current project scope and proposed firm service level, the Company would explore modifications to project scope and firm service agreement terms to ensure that additional pipeline capacity does not need to be purchased for this project. In the event that a firm service agreement cannot be reached with either the Navy or the Navy's contractor after exploring modifications in project scope and agreement terms, the Company would explore non-firm transportation service opportunities with the Navy for the CHP equipment.

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Division 6-4, page 3

- d) Negotiations regarding the 52 heating-degree-day firm service level commenced on July 31, 2018.
- e) The Navy, the Navy's contractor, and the Company have participated in weekly calls regarding the project including discussion about the 52 heating-degree-day firm service level. Conversations have been productive, and the Company is optimistic that an agreement will be reached which meets the needs of the Navy or Navy's contractor and the Company.
- f) The CHP equipment owned and operated by the Navy or the Navy's contractor will be served under Rate Schedule 24.

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Division 6-5

Request:

The notification in this docket represents to the Commission that the Navy would become a firm gas customer, stating:

"The Navy will sign a contract with National Grid for gas system upgrades to provide firm gas supply to the CHP. Currently, the Navy has interruptible gas supply, where they switch to burning oil during times of peak gas demand, i.e. very cold weather."

In contrast, the response to Division 2-13 states that the Navy will be an interruptible customer and Division 3-3 states that the Navy must agree not to operate on some of the coldest days of the winter. Please explain why the Company represented in the notification that the Navy would be a firm customer and did not disclose the need for the Navy to be interrupted when weather conditions are colder than 52 heating degree days.

Response:

When the Company receives a Gas Capacity Request, the Company's Operations Engineering team performs an analysis that specifies the necessary gas system upgrades to support the incremental firm gas deliveries from the receipt point (i.e. Company's city gate) to the delivery point (i.e. outlet side of customer meter). The Company's response to Division 6-3(b) summarizes the gas system upgrades necessary to provide firm service (distribution only) to the CHP equipment without interruption. In addition, Pressure Regulation Engineering determined that the Portsmouth take station has the necessary regulation and heater capacity to accommodate the CHP gas load on a firm basis. For large loads, the Company normally evaluates the impact of proposed load additions on upstream gas supply assets. This analysis was not performed on the upstream gas supply assets feeding the Portsmouth take station prior to making its notification in this docket. Therefore, the Company did not disclose the need for a 52 HDD firm service level in its notification.

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Division 6-6

Request:

The response to Division 2-4 appears to indicate that the Company did not evaluate whether there would be a need for new pipeline capacity until after the Division asked the information request, stating (underline added here):

"After receiving this data request, the Company analyzed whether additional interstate pipeline capacity would be necessary to provide firm service to the project, and the Company determined that no such additional capacity would be necessary, so long as the Navy agreed to cease CHP equipment operation on days on which weather conditions are colder than 52 heating degree days . . . ."

Did the Company analyze whether additional interstate pipeline capacity would be necessary for the CHP to operate on a firm basis before the Company made the incentive offer to the Navy's contractor? If not, please explain why not, given the impact on gas costs if new capacity needed to be purchased? If the Company did so, please explain what transpired and provide documentation, if any, of this analysis and when it occurred.

Response:

When the Company made the incentive offer to the Navy's contractor, the Company believed that it had completed all required reviews regarding the proposed CHP equipment addition to the gas distribution system. Please see the Company's response to Division 6-5. Specifically, the Company understood that it needed to analyze whether additional pipeline capacity was necessary, and did identify the need for the analysis before making the incentive offer. Despite identifying the need for the analysis, the results of such an analysis were not confirmed before the Company extended the incentive offer.

After the Division requested the information in Division 2-4, the Company completed its review of the CHP equipment impact on upstream gas supply assets feeding the Portsmouth take station. As a result of this analysis, the Company determined that it could not serve the load for the CHP equipment on gas days colder than a 52 heating-degree-day condition. On July 31, 2018, the Company initiated discussions with the Navy and the Navy's contractor about the 52 HDD firm service requirement in an effort to meet the needs of both the Navy and the Company.

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Division 6-7

Request:

On what date did the Company first inform the Navy that it could not be a firm gas customer and would need to be interrupted on some of the coldest days of the year, as described in the response to Division 2-4? Please provide documentation that shows the Navy has been informed that it will not actually be a "firm" gas customer and the date when it first came to this understanding. Please also explain how the terms of the gas distribution service agreement would address this requirement and how it would be consistent with the approved tariff options now in place for customers.

Response:

The Company did not inform the Navy that it could not be a firm gas customer. Rather, on July 31, 2018, the Company first informed the Navy that the Company could only provide firm gas service to the proposed CHP equipment on gas days that averaged 52 heating degree days or warmer. The Company informed the Navy that either the Navy or the Navy's contractor would need to cease using natural gas in the CHP equipment on any day that was forecasted to exceed a 52 heating degree day (HDD) weather condition. The Company also informed the Navy and the Navy's contractor that, on average, this weather condition occurs three days per year. Please see Attachment DIV 6-7 for key email communications regarding the meeting invitation on July 31, 2018 regarding winter CHP operation and follow up email communication from the Navy's engineer discussing the impact of a "three day interruption of natural gas by NGRID."

The tariff options available to the Navy and Navy's contractor for the CHP equipment are firm gas sales service, firm gas transportation service, or non-firm gas transportation service. The Navy and the Navy's contractor are only interested in bundled gas supply and transportation and would like to burn natural gas on as many days as possible. Therefore, only firm gas sales service will meet their needs. There are no reasonable means to provide an uninterrupted supply of gas, given the timeframe within which the Navy and Navy's contractor desire to begin receiving gas service to the CHP equipment and the significant cost associated with the procurement of incremental pipeline capacity to the Portsmouth take station. As an alternative to significant pipeline infrastructure investment (i.e. a "non-pipe alternative"), the Company is proposing to execute a firm service agreement with the Navy or the Navy's contractor that has a specified 52 heating degree day firm service level. Under proposed terms, the Navy would agree to cease using natural gas in the CHP equipment on any day that is forecasted to exceed a 52 heating degree day (HDD) weather condition and waive its right to an uninterrupted supply of gas. All other terms of the Gas Tariff would remain in effect. These proposed firm service agreement terms will ensure that the CHP equipment can begin receiving service by 2019 with

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Division 6-7, page 2

fewer interruptions than non-firm service while also allowing the Company to avoid significant pipeline infrastructure investment.



From: Dunham, Jeffrey B.  
Sent: Tuesday, July 31, 2018 3:18 PM  
To: 'Jim Falsetti'; Pascual, Beth A CIV NAVFAC LANT, PW64; [naveenk@nkengineers.com](mailto:naveenk@nkengineers.com); Sullivan, Daniel L CIV NAVFAC  
MIDLANT, PWD Newport; [debra.kemp@navy.mil](mailto:debra.kemp@navy.mil); Breckner, John K CIV NAVFAC MIDLANT, PW  
Cc: Foran, Matthew A.; Henschel, Rachel; Ferris, Gerald Jr  
Subject: Navy CHP operation in peak winter conditions

Afternoon folks

NGrid would like to have a conference call this week to discuss the CHP operation during peak winter conditions which may occur several times a year.

Below are the time slots that work for NGrid, please reply with your availability and I will set up the call

4pm today  
Wed 830 to 9 or any time 130-4  
Thurs 2-4pm  
Friday 3PM or later

Thanks

Jeffrey Dunham  
Certified Energy Manager  
LEED Accredited Professional (AP)  
National Grid  
280 Melrose St.  
Providence, RI 02907  
401-784-7638 Office  
401-527-4055 Cell  
315-460-8954 Fax

**From:** Dunham, Jeffrey B.

**Sent:** Tuesday, July 31, 2018 3:48 PM

**To:** Naveen Kapur; 'Jim Falsetti'; Pascual, Beth A CIV NAVFAC LANT, PW64; Sullivan, Daniel L CIV NAVFAC MIDLANT, PWD Newport; [debra.kemp@navy.mil](mailto:debra.kemp@navy.mil); Breckner, John K CIV NAVFAC MIDLANT, PW

**Cc:** Foran, Matthew A.; Henschel, Rachel; Ferris, Gerald Jr

**Subject:** RE: EXT || Re: Navy CHP operation in peak winter conditions

Just sent invite for a call today at 4

I will have a second call for anyone who cannot get on today's call

Jeffrey Dunham  
Certified Energy Manager  
LEED Accredited Professional (AP)  
National Grid  
280 Melrose St.  
Providence, RI 02907  
401-784-7638 Office  
401-527-4055 Cell  
315-460-8954 Fax

---

**From:** Naveen Kapur [<mailto:naveenk@nkengineers.com>]

**Sent:** Tuesday, July 31, 2018 3:37 PM

**To:** Dunham, Jeffrey B.; 'Jim Falsetti'; Pascual, Beth A CIV NAVFAC LANT, PW64; Sullivan, Daniel L CIV NAVFAC MIDLANT, PWD Newport; [debra.kemp@navy.mil](mailto:debra.kemp@navy.mil); Breckner, John K CIV NAVFAC MIDLANT, PW

**Cc:** Foran, Matthew A.; Henschel, Rachel; Ferris, Gerald Jr

**Subject:** EXT || Re: Navy CHP operation in peak winter conditions

What is the call in number?

Naveen Kapur, PE  
N.K. Engineers, Inc  
755 Main Street  
Monroe, CT 06468  
(O) 203-459-1200  
(F) 203-459-1212  
(M) 203-209-3884

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**From:** "Dunham, Jeffrey B." <[Jeffrey.Dunham@nationalgrid.com](mailto:Jeffrey.Dunham@nationalgrid.com)>

**Date:** Tuesday, July 31, 2018 3:18 PM

**To:** 'Jim Falsetti' <[jim.falsetti@bqenergy.com](mailto:jim.falsetti@bqenergy.com)>, "Pascual, Beth A CIV NAVFAC LANT, PW64" <[beth.pascual@navy.mil](mailto:beth.pascual@navy.mil)>, Naveen Kapur <[naveenk@nkengineers.com](mailto:naveenk@nkengineers.com)>, "[daniel.l.sullivan3@navy.mil](mailto:daniel.l.sullivan3@navy.mil)" <[daniel.l.sullivan3@navy.mil](mailto:daniel.l.sullivan3@navy.mil)>, "[debra.kemp@navy.mil](mailto:debra.kemp@navy.mil)" <[debra.kemp@navy.mil](mailto:debra.kemp@navy.mil)>, "Breckner, John K CIV NAVFAC MIDLANT, PW" <[john.breckner@navy.mil](mailto:john.breckner@navy.mil)>

**Cc:** "Foran, Matthew A." <[Matthew.Foran@nationalgrid.com](mailto:Matthew.Foran@nationalgrid.com)>, "Henschel, Rachel"

<[Rachel.Henschel@nationalgrid.com](mailto:Rachel.Henschel@nationalgrid.com)>, "Ferris, Gerald Jr" <[Gerald.Ferris@nationalgrid.com](mailto:Gerald.Ferris@nationalgrid.com)>

**Subject:** Navy CHP operation in peak winter conditions

Afternoon folks

NGrid would like to have a conference call this week to discuss the CHP operation during peak winter conditions which may occur several times a year.

Below are the time slots that work for NGrid, please reply with your availability and I will set up the call

4pm today

Wed 830 to 9 or any time 130-4

Thurs 2-4pm

Friday 3PM or later

Thanks

Jeffrey Dunham  
Certified Energy Manager  
LEED Accredited Professional (AP)  
National Grid  
280 Melrose St.  
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401-527-4055 Cell  
315-460-8954 Fax

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You may report the matter by contacting us via our [UK Contacts Page](#) or our [US Contacts Page](#) (accessed by clicking on the appropriate link)

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For the registered information on the UK operating companies within the National Grid group please use the attached link: <https://www.nationalgrid.com/group/about-us/corporate-registrations>

**Ferris, Gerald Jr**

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**From:** Foran, Matthew A.  
**Sent:** Wednesday, August 15, 2018 12:05 PM  
**To:** 'john.breckner@navy.mil'; 'beth.pascual@navy.mil'; 'debra.kemp@navy.mil';  
'jim.falsetti@bqenergy.com'  
**Cc:** Moreira, David; Dunham, Jeffrey B.; Ferris, Gerald Jr; Duggan, Francis E.; Dion, Thomas;  
Caliri, Stephen A.  
**Subject:** Naval Station Newport Outage Data  
**Importance:** High

Dear John, Beth, Debra and Jim:

Based on a review of our historic outage records, there were five electricity outages over the last twenty years (1998-2018) that would have affected the Naval Station Newport.

**None of these outages occurred during weather that was colder than a 52 HDD.**

The following table summarizes the outage dates, HDD and approximate duration. The duration of each outage is estimated since many of the substations were picked up in steps. National Grid cannot determine the exact duration of the Navy's outage on these dates.

<u>Date</u>	<u>HDD</u>	<u>Estimated Outage Duration</u>
04/28/02	18	6 hours
12/27/04	48	35 minutes
08/28/11	0	26 hours
02/08/13	39	21 hours
07/16/14	0	8 hours

Please let me know if you have any further questions.

Matthew Foran  
Director, Customer Gas Connections  
Customer Operations  
National Grid  
40 Sylvan Road, E1.495  
Waltham MA 02451  
(781) 907-1493 office  
(617) 593-0517 mobile

**Ferris, Gerald Jr**

---

**From:** Dunham, Jeffrey B.  
**Sent:** Friday, September 07, 2018 6:26 AM  
**To:** Jim Falsetti; debra.kemp@navy.mil; Sullivan, Daniel L CIV NAVFAC MIDLANT, PWD Newport; beth.pascual@navy.mil; Breckner, John K CIV NAVFAC MIDLANT, PW  
**Cc:** joshua.e.baker.ctr@navy.mil; naveenk@nkengineers.com; Foran, Matthew A.; Ferris, Gerald Jr; robert.mulhern@navy.mil; james.f.carlson1@navy.mil; Reichert, John C CIV NAVFAC MIDLANT, PWD Newport; Paine, Fred; Dion, Thomas; andrew.gallagher@navy.mil; elizabeth.a.smith2@navy.mil; paul.curran@bqenergy.com; Moreira, David  
**Subject:** Navy CHP Gas service amendment language for HDD above 52

Morning

Below is the language that Ngird has developed regarding gas service on HDD exceeding 52. This language will either be incorporated into an amendment if the gas service application remains with BQ or added to a new gas service application if changed to the Navy. Please review and comment if needed

Applicant agrees to cease using natural gas by not later than 10:00 A.M. Eastern Standard Time on any day that is forecasted to exceed a 52 heating degree day (HDD) weather condition at T.G. Green International Airport in Providence, Rhode Island (USW00014765) unless there is an electric utility service outage on such day at the Property and the Company can accommodate gas usage by the Applicant resulting from a corresponding reduction in gas usage by other customers on Aquidneck Island also affected by the electric outage . The Company shall provide as much notice to Applicant as is reasonably practical, but in no event fewer than 24 hours, of its forecast of a day that is expected to exceed 52 HDD. In the event that there is an electric utility service outage at the Property on a day that is expected to exceed 52 HDD, Applicant agrees to cease using gas service from the Company immediately upon restoration of the electric utility service. Applicant understands that under the Company's gas tariff, RIPUC NG-GAS No. 101 (the "**Gas Tariff**"), the Applicant is entitled to an uninterrupted supply of gas and, further, a continuous supply of gas of not less than 1,000 Btu per cubic foot, as a Firm customer receiving service under the Rate 24 provision of the Gas Tariff, except for under certain conditions set forth by the Gas Tariff. Notwithstanding such rights under the Gas Tariff, Applicant agrees to the interruptions described in this Section and waives its right to an uninterrupted supply of gas and a continuous supply of gas of not less than 1,000 Btu per cubic foot under the specific circumstances described by in this Section.

Applicant shall, to the fullest extent permitted by law, indemnify, hold harmless and release National Grid, its parent company, affiliates and subsidiaries and their respective directors, officers, employees, agents, servants, representatives, successors and assigns from and against any and all claims, demands, liabilities or expenses related to the cessation of natural gas utilization on days which exceed a 52 HDD condition. This indemnity and release provision survives the expiration or termination of this Amendment and extends to the respective successors and assigns of National Grid and applicant.

Jeff

Jeffrey Dunham  
Certified Energy Manager

LEED Accredited Professional (AP)  
National Grid  
280 Melrose St.  
Providence, RI 02907  
401-784-7638 Office  
401-527-4055 Cell  
315-460-8954 Fax

The Narragansett Electric Company  
d/b/a National Grid  
RIPUC Docket No. 4755  
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Division 6-8

Request:

Please explain why the Company offered \$1,000 per kW, as opposed to a lower or higher amount. In providing this response, please identify the standard applied and all criteria employed to arrive at this precise number. Please do not simply recite the eligibility requirements as occurred in the response to Division 3-1 or indicate that the customer was eligible up to \$1,125/kW as in the response to Division 5-6 or note that \$1,000 is mathematically lower than \$1,125. Rather, describe the actual rationale for how and why the Company decided to offer \$1,000, as opposed to a figure that was lower or higher within the range allowed under the energy efficiency plan. Please also provide copies of any work papers supporting any financial analysis in arriving at this figure.

Response:

In the Notification letter and responses to previous data requests, the Company has clarified the following:

- The incentive is equal to a \$1,000 per kW for a 7 MW system
- The system being proposed is larger than 7MW; it is 7.965 MW (approximately 7.752 after parasitic load)
- The incentive of \$7 million is equal to \$903 per kW for 7.752 MW (after parasitic load)

Therefore, the Company will explain the rationale for why it offered \$903 per kW for the 7.752 MW system (after parasitic load).

The rationale for the incentive is as follows: it is what moved the Navy and BQ to say yes to the project while adhering to the program guidelines, which were designed to incent customers to pursue CHP as an energy efficiency opportunity.

As background, in October 2016, the first time the Company discussed possible incentives with the Navy and BQ Energy, it was a high level conversation to see if there was project potential. The Company explained the CHP incentive tiers as described in the 2016 EE Plan. The Company explained that when designing a system, a customer should aim for the highest efficiency possible and that a system at 60% overall energy efficiency (OEE) or more would qualify for \$1000 per kW. The higher tier incentive up to \$1250 per kW based on past energy efficiency projects was also discussed, but the Company did not know at the time if the Navy qualified. The Navy and BQ said they were considering a 7 MW system (various sizes would

Division 6-8, page 2

be considered over the next few months). This conversation was the initial discussion for feasibility purposes to see if all parties were still interested in proceeding.

Over the next few months, BQ and the Navy began to make decisions about the project, including size and run time. National Grid had several conversations with BQ and the Navy regarding the OEE and that the system was being designed to run in the winter only. In August 2017, the Navy requested a waiver of the 55% OEE, and the Company declined and instructed the Navy to work on increasing the OEE above 55%. The Company provided technical advice on how to achieve a higher OEE. Several other possible sizes and run times were considered to try to get to a cost effective project above 58% to give a proper cushion on the 55% efficiency range.

The Navy requested an incentive estimate in August 2017. The National Grid Sales representative replied it would be \$900 per kW based on the current model with an OEE slightly greater than 55%. The Company then signed an NDA with BQ Energy to review the energy model first-hand in late November 2017 in order to have more accurate information with which to run a more precise BCR.

The final incentive was set forth in the January 2018 Offer Letter; see Attachment DIV 7-8 (a). The incentive of \$7 million is equivalent to \$903 per kW after parasitic load and in that level the Company considered the following:

- The OEE of 58% qualified the system for the target incentive of \$900 per kW.
- The Navy qualified for up to a target incentive of \$1125 per kW based on previous energy efficiency projects.
- The system would not run during the summer or peak summer hours.
- Based on prior conversations, the Company believed that \$7 million was the minimum amount of the incentive necessary for the complex deal to go through between the Navy and BQ.
- The Company would have negotiated higher, per the 2018 EE Plan CHP incentive levels, if deemed necessary.

The Navy accepted the offer so no discussion was needed to increase the incentive.



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Division 6-9

Request:

The Company's response indicates in response to Division 5-6 that the customer qualified for "up to \$1,125/kW." Please indicate the Company's understanding of what the minimum incentive (if any) was that could have been offered to the customer while staying within the guidelines and requirements of the EE plan. Please explain the basis for this understanding.

Response:

For this specific project where National Grid worked with BQ and the Navy to design a cost effective system with at least 55% Overall Energy Efficiency (OEE), the minimum incentive is \$900 per net kW, which equals gross nameplate minus parasitic loss.

For all CHP projects, in absolute terms, there is no minimum incentive because the 2018 EE Annual Plan describes the Company's discretion in setting CHP incentives, specifically: "Incentives will be determined following cost effectiveness screening in consultation with National Grid personnel," and "the amount of incentive the Company is willing to offer and commit to the customer could depend upon the amount of funds that are budgeted or remaining in the budget of the energy efficiency program."

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Division 6-10

Request:

Please describe the sequence of the negotiations regarding the incentive offer. For example, was \$1,000 per kW the Company's first and only offer or was there an exchange of proposals? Please also indicate the date when the negotiations first commenced regarding the dollar amount of the incentive and the date a firm offer was actually delivered to the contractor. Please provide copies of the actual offer letters and communications conveying the incentive estimate.

Response:

Please see the Company's response to Division 6-8 for the sequence of discussion involving incentives. There were no proposals exchanged between the Company, BQ and the Navy. The Company extended an offer to the Navy for an approximately \$7.2 million dollar incentive on January 30, 2018. The Navy requested that the Company address the offer to the Contractor – BQ Energy. The Company extended a second offer letter naming BQ Energy as the recipient in April 2018. The incentive amount of \$7.2 million dollars remained the same, and the Navy and BQ Energy accepted the offer.

See Attachments DIV 7-8 (a) and DIV 7-8 (b) for copies of the offer letters.

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Division 6-11

Request:

Referring to the response to Division 5-2, the response states in part: "During this time, the Navy said several times that CHP would not be possible without an energy efficiency incentive and that the Navy would significantly change the lease agreement if the CHP could not qualify for an incentive."

- a) Did the Company seek any support for the Navy's assertion? If so, please describe.
- b) Did the Company engage in any discussion with the Navy or the contractor regarding the amount of the incentive that would be needed by the contractor and Navy in order to assure that the project goes forward before offering \$1,000 kW? If not, why not? If yes, please explain.
- c) Did the Company review any financial data from the Navy relating to the financial viability of the project before offering \$1,000 kW in order to assure that the amount being offered was appropriate and not more than would be needed for the project to go forward? If not, why not? If yes, please summarize the review undertaken and the conclusions drawn.

Response:

- a) The Company did not seek any support for the Navy's assertion. The Company believed that the Navy and BQ Energy were negotiating in good faith.
- b) Please see the Company's response to DIV 6-8 for a sequence of discussions regarding the incentive and for the equivalent amount of the incentive, e.g. \$903 per kW for net nameplate.
- c) As stated in the response to DIV 6-8, the incentive is equal to \$903 per kW for net nameplate. In the evaluation of the benefit cost ratio, the Company reviewed the costs of the project. The cost of the installation was in line with other large similar projects. The gas consumption, heat recovery, kWh generation and maintenance costs all fell in line with other projects of similar magnitude. The Company did not believe it was

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necessary to request the financial details of the lease between the Navy and the contractor. The contractor provided a cost to install the project which included a turnkey system delivered and integrated into the Navy site. The milestones of the project as outlined in the Minimum Requirement Document (please see response to Division 7-8) ensure financial documentation is provided substantiating the cost and the kWh output results comply with the original energy model. If those milestones are not met, the Company can choose to withhold or cancel the incentive.

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Division 6-12

Request:

Will the Navy's CHP project require scheduled maintenance during the winter period when the CHP unit is forecasted to be operating? If yes, please explain the nature of the maintenance, how many days during the winter period that the unit would be out-of-service, and the timing of such maintenance. Please also explain whether these days were accounted for in the production assumptions or whether the assumptions need to be adjusted to take it into account, in addition to days of interruption.

Response:

The Company expects that all of the scheduled maintenance will be performed during the off season months. Based on the Company's experience with CHP systems, gas turbine maintenance is usually performed every five years. Certain monitoring points are used to predict performance, and, if items experience abnormal parameters, then the unit is shutdown to protect it. Ancillary systems also are maintained throughout the year with normal yearly and/or quarterly maintenance, as required.

In addition to scheduled maintenance performed when the unit is not running, there are down days accounted for in the production assumptions. Specifically, the BQ energy model used to arrive at the savings estimate includes 3 unplanned outage periods of 6 days each during the winter, for a total of 18 days of unplanned outage.

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Division 6-13

Request:

How much notice will the Navy need in order to switch from the CHP unit to its older oil-fired steam plant on days calling for an interruption? Then, how much time would the Navy need to switch back, once the interruption period is over?

Response:

The Company will make reasonable efforts to notify the Navy or its authorized contractor at least 24 hours in advance of days which will require CHP curtailment. The Navy finds this to be an acceptable time frame to be able to switch systems.

The boiler plant will remain in standby running mode in case the generator trips out or the Company calls for reduction in gas load. This already has been accounted for in the energy model used for screening.

Several hours are required for a gas turbine to start up and begin generation again at full load. The Company will make reasonable efforts to notify the Navy or its authorized contractor at least 24 hours in advance of the day on which CHP equipment operation may resume.

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Division 6-14

Request:

Referring to the corrected responses to PUC 1-1 and Division 1-2 filed on August 14:

- a) Please explain why Company did not have the estimates correct at the time of making an incentive offer in April 2018 and when the notification was filed.
- b) Please explain why the project cost estimate was decreased from \$20 million to \$17.5 million. Please also provide an itemization of all the cost components and identify the Company's source for the project cost.
- c) Please explain why the O&M cost increased by \$175,000.
- d) Please explain why the lifetime oil savings decreased by \$3,005,745.
- e) Please explain why the lifetime gas cost increased by \$302,117.

Response:

- a) Four issues led to DIV 1-2 Corrected and DIV 1-3 Corrected:
  - 1. There was an adjustment to the project cost based on more detailed information.
  - 2. There was a typographical error in the O&M calculation.
  - 3. There was an incorrect assumption uncovered upon looking at some of the data requested about the post-project energy supply (gas/oil) to the existing central steam plant.
  - 4. BQ's mechanical engineer recommended an increase in the CHP system "heat rate safety factor" when reviewing revisions to the energy model resulting from #3 above.
- b) The \$20 million project cost estimate had been grossed up by National Grid staff to \$2,500/kW to make the BCR calculation more conservative in light of potential unforeseen cost increases. In an effort to better refine the BCR calculation, National Grid staff requested a more detailed cost breakdown from BQ's consultants to verify project cost and included equipment, which led to the change in cost from \$20 million to \$17.5 million. That cost breakdown is as follows:

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<b>Total Project Cost</b>	<b>Taurus 70 Gas Fired Turbine with Duct Firing - Gas Fired Only</b>
Total - Equipment/Material Costs	\$8,848,980
Total - Equipment Purchased by Contractors	\$147,422
Total - Subcontracted Labor	\$6,564,949
Total Engineering and Design Fee's	\$1,788,985
Total Including Owners Contingency	\$17,350,336

- c) BQ's engineering consultants estimated \$687,500 in annual O&M costs, as shown in the corrected information. In earlier data request responses, the Company used a different calculation approach and mistakenly used \$678,500 in the cell that calculated the annual O&M cost.
- d) The lifetime oil savings were reduced due to the revised calculation of energy impacts resulting from the existing central steam plant remaining on interruptible gas service, where the central steam plant will transition from gas to oil at 40 HDDs and greater. Earlier data request responses included the assumption that the existing central steam plant would operate on firm gas supply, where the yearly gas/oil consumption split had been proportioned based on 2016/2017 gas/oil consumption profiles. The Company chose to correct those proportional assumptions based on a better means of calculation using 40 HDDs as a model to switch to back up fuels.
- e) The lifetime gas costs changed due to the interruptible gas service issue described in part d above and because BQ increased the CHP gas turbine "heat rate safety factor" from 3% to 5% upon reviewing the interruptible gas updates to the energy model.
1. The interruptible gas service change resulted in reducing the negative gas costs by \$1,733,699 due to using more oil and less gas as noted in part d.
  2. The 2% increase in "heat rate safety factor" recommended by BQ increased CHP system gas consumption, adding \$2,165,542 in gas cost.
  3. Combining 1 & 2 above, the overall change in gas costs went from -\$79,259,076 in the initial version to -\$79,690,720 in the corrected version, a cost increase of \$431,644.



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Division 6-15

Request:

Referring to the response to Division 2-2, please indicate whether the Company's in-house gas supply experts who manage gas supply for the Company believe that the 2015 avoided cost figures used to calculate the gas costs in the BCA are an appropriate and reasonable means of forecasting the actual gas costs of the Navy CHP project that will be taking interruptible service from the Company and not using the CHP year round. If not, explain why not. If yes, explain why.

Response:

Yes, the entire Company recognizes that the 2015 avoided costs based on the 2015 Avoided-Energy-Supply-Component Study (2015 AESC) are the appropriate and reasonable costs for screening energy efficiency measures such as CHP. The 2015 AESC study was vetted by the AESC Study Group, which is a broad group of stakeholders representing all energy efficiency programs in New England and includes the Company's in-house gas supply experts. All avoided costs presented in the 2015 AESC study received consensus support from the AESC Study Group stakeholders during the study process.

None of the avoided gas costs in the 2015 AESC study are explicitly differentiated by firm or interruptible gas supply; however, it should be assumed implicitly that the avoided gas costs in the 2015 AESC study are modeled for firm gas supply customers because firm gas supply is the predominant gas supply structure for gas customers. Please see the Company's response to Division 6-16.

The Navy CHP Project's gas costs are assessed consistently with the RI Test as approved in Section 9 of Attachment 4 in Docket No. 4755. Specifically, natural gas benefits in the RI Test are valued using avoided natural gas values from the 2015 AESC Study, Appendix C.

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Division 6-16

Request:

Referring to the avoided gas costs used to estimate the gas costs in the BCA analysis, does this avoided gas cost forecast assume costs avoided by a firm gas customer taking firm gas supply? Is this an average annual gas cost? Does this gas cost appropriately estimate the cost of gas for an interruptible customer who purchases gas only for the winter period similar to the period of purchases forecasted for the Navy? Please do not simply refer to the company's understanding of the EE program rules; this request is asking for an answer regardless of whether the Company believes it was bound in some way to use the 2015 avoided gas cost estimate in this case.

Response:

The avoided gas cost forecast provides avoided gas costs for different segments of customers based on the customer class (i.e. Residential vs. C&I), as well as the gas application (i.e. Heating, Non Heating, Hot Water, and All). The avoided costs vary for each customer segment and are based on the modeled gas demand profile for the respective segment. For instance, the avoided costs for a C&I heating customer would assume that a predominant concentration of gas demand occurs during the winter months and yields a higher avoided cost than the Non-Heating application due to higher gas prices in the winter months. None of the avoided gas costs in the 2015 Avoided Energy Supply Component (AESC) study<sup>1</sup> are explicitly differentiated by firm or interruptible gas supply; however, it should be implicitly assumed that the avoided gas costs in 2015 AESC study are modeled for firm gas supply customers, as firm gas supply is the predominant gas supply structure for gas customers.

The underlying gas price forecast for the New England region is based on long-range projections of the Henry Hub gas price contained in the Energy Information Administration's Annual Energy Outlook 2014 Reference case.<sup>2</sup> Although the avoided gas cost forecast is not differentiated for firm and interruptible gas supply customers, the underlying basis for the price forecast (i.e. the Henry Hub price forecast) would not change based on whether a customer takes firm or interruptible gas supply. The key difference in cost between interruptible gas supply customers compared to firm gas supply customers is the cost of gas capacity, with interruptible gas customers likely having a lower cost of gas capacity and a lower avoided gas cost. The 2015 AESC did not provide an estimate of avoided gas capacity costs, and specifically recommended that such an estimate would be necessary only if the program administrators implement a

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<sup>1</sup> The BC analysis for the Navy CHP project was conducted using the avoided costs provided by the AESC 2015 study.

<sup>2</sup> 2015 AESC study at 2-19.

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program to “reduce peak day sendout only, rather than reducing gas commodity use plus peak day sendout.”<sup>3</sup> In lieu of differentiated avoided costs for firm and interruptible gas supply customers, it is reasonable to apply the avoided gas cost estimates provided by the 2015 AESC study in screening the Navy CHP project, particularly where the gas benefits in a CHP project are negative and using a higher avoided gas cost would result in a more conservative BC screening for such measures.

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<sup>3</sup> 2015 AESC Study at 2-68.

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Division 6-17

Request:

Referring to the response to Division 2-9, it states in part:

"Beginning in November 2016, the Navy proposed to install a 7,000 kW generator to operate all year round. The Navy and the developer requested that the Company estimate the incentive early in the process so the Navy could run its financial models. The Company's analyses reasoned with the "proper design caveats" (achieving the 55% Overall Efficiency metric, etc.) that the customer would most likely meet or exceed the \$1000/kW threshold and that the Navy could continue this minimum incentive level. Therefore, the Company estimated a \$7 million incentive for the project.

"One year later, the Navy's team informed the Company that the design of the system had changed. The size of the unit increased from 7.0 MW to 7.965 MW, and operation would likely be October through April instead of year-round. It is unique that the project will not create summer kW super peak savings like a typical year-round operational CHP."

- a) Please identify who the "developer" was to which this response refers in the November 2016 period. Please explain why the Navy was running financial models if the ultimate contractor was providing the CHP unit as in-kind consideration for the CHP.
- b) Please explain what is meant in the response by describing the \$1,000/kW as the "threshold" in the statement and why the Company refers to it as "this minimum incentive level" (i.e., "the customer would most likely meet or exceed the \$1,000/kW threshold and that the Navy could continue this minimum incentive level.").
- c) Please explain whether the developer was the same entity "one year later" and with whom the Company was communicating at this stage about the incentive.
- d) Please explain how and why it is relevant to the amount of the incentive that "the project will not create summer kW super peak savings like a typical year-round CHP" and why the incentive remained at \$1,000/kW in light of this reduced benefit.

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Response:

- a) The developer the Company was referring to in its response to Division 2-9 was BQ Energy. The Company does not know why the Navy was running financial models, but it assumes that it was to provide the contractors and the Navy the ability to run possibilities for their project. The Company was not aware until much later in the process of the payment in-kind.
- b) Please see the response to DIV 6-8 for clarifications to the response to DIV 2-9. Additionally, "threshold" typically refers to the overall energy efficiency (OEE). For "minimum incentive level," please see the response to DIV 6-9.
- c) The developer referred to in the response to DIV 2-9 was the same in 2016 and one year later – BQ Energy. At the one-year-later stage (2017), the Company was communicating with both BQ Energy and the Navy about the incentive and the design criteria.
- d) Please see the response to DIV 6-8 for a description of the rationale for the incentive.

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Division 6-18

Request:

Referring to the response to Division 2-9, why did the Company not lower the incentive estimate once it was determined that the project would not operate year-round and, thus, would have reduced peak savings?

Response:

The Company made one official offer of incentive to the Navy in January 2018, see Attachment DIV 7-8 (b). The Company estimated the incentive several times before the official offer based on the Navy and BQ's information and plans. Those estimates were for informational purposes and also to motivate the Navy and BQ to design a high efficiency system. Estimates did change as information became available. For example, in August 2017, the Navy and BQ described a design with 55% OEE and the Company provided an estimate of \$900/kW. The Company also reiterated the incentive tiers and what qualified for them.

The actual incentive offer is equal to \$903 per net nameplate kW of 7.75 MW. That is lower than the target incentive of up to \$1125/kW for which the Navy qualifies.

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Division 6-19

Request:

Did the Company perform a benefit cost analysis before identifying \$1,000/kw to the Navy in November 2016 as the incentive? If yes, please provide a copy. If not, please explain why not.

Response:

The Company did not provide a \$1000/kW incentive offer in November 2016. The Company described the 2016 EE CHP incentive levels as a range of incentives from \$900-\$1250/kW, based on various criteria. The November 2016 meeting with the Navy and the Office of Energy Resources was a high level feasibility conversation during which the Company answered questions regarding its energy efficiency incentives and interconnection processes.

Most businesses exploring large CHP like to know information such as the range of incentives and processes so that they can create a high level path for their project and better predict their future financial decisions. The Company described the \$1000/kW as an initial illustrative incentive because, at that early design stage, the Company wanted the Navy to design to a high OEE that would qualify for \$1000/kW.

The Company did not perform a benefit cost analysis before describing the 2016 EE Annual Plan CHP incentives available to customers. The BCR tool was explained to the customer. There were no actual inputs at this early stage to run the screening tool against.

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Division 6-20

Request:

The response to Division 2-9 indicates a discussion about the incentive "one year later."

- a) Please identify the approximate date that this discussion occurred.
- b) Did the Company perform a benefit cost analysis at this time? If yes, please provide a copy. If not, please explain why not.

Response:

- a) The approximate date was August 2017.
- b) Yes, the Company performed a benefit cost analysis in August 2017. The Company ran the BCR numerous times over the course of project development to inform conversations, inform technical assistance, and improve system design. The Company does not have a version of this particular BCR because the tool was continuously updated as project information became available and the tool version was overwritten.



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Division 6-21

Request:

The Company's response to PUC 1-1 states: "The incentive is a negotiated amount based on the unique elements of the Navy project; it was planned as \$1,000 per kW for a 7 MW system, equal to \$7 million."

- a) What is the Company's understanding of the concept of "negotiation" in the context of the Company proposing an incentive to a customer considering a CHP unit?
- b) What was being "negotiated" between the Company and the customer?
- c) In November 2016, was there any "negotiation" or did the Company simply offer or identify this level of incentive to the Navy and its developer? If there was negotiation, please describe it.
- d) Does the Company agree that when the Company is given the responsibility to "negotiate" an incentive "up to" a specified amount, that the Company has the responsibility to negotiate the lowest possible incentive payment that still results in the CHP project being advanced by the customer, in order to save money for ratepayers consistent with least cost procurement? If not, why not.

Response:

- a) Negotiations are discussions aimed at reaching an agreement. The Company had many discussions with the Navy and BQ so that all parties could reach an agreement: an energy efficient CHP that met the Navy's needs. Throughout the discussions, the Company informed the Navy and BQ what the CHP incentive guidelines were, reviewed and advised on project design, screened the designs for cost-effectiveness, and proposed an incentive as part of the official offer letter in January 2018, please see response to Division 6-8 and Attachments DIV 7-8 (a) and 7-8 (b).
- b) The Navy and BQ wanted a CHP that met the Navy's needs and also qualified as energy efficiency. National Grid wanted the CHP to be energy efficient, specifically cost-effective and above 55% Overall Energy Efficiency (OEE). In efforts to reach agreement with the Navy, there were many discussions. Some discussions led to changes in the CHP design.

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- c) The Company did not offer an incentive in November 2016; it merely reviewed the parameters of the incentive program that would apply to the CHP project. See response to Division 6-8. There was no negotiation of the incentive amount at this time, although the Navy indicated that it would need a significant incentive to move forward with the project.
- d) The Company has the responsibility to deliver energy efficiency under the Least Cost Procurement law, as defined by the standards approved by the PUC in the Annual Energy Efficiency Plans. Please see response to Division 6-22. CHP is one of the lowest cost measures in energy efficiency. Additionally, as described in the Company's response to Division 6-8, this specific incentive was very close to the bottom of the range for CHP incentives at \$903 per kW.

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Division 6-22

Request:

Please explain the Company's understanding of how it should exercise its responsibility to arrive at an appropriate incentive level when the terms of the EE program provide a range up to \$1,125/kW for a CHP project. In addressing this request, please also answer the following questions: (a) Do the principles of least cost procurement apply, through which the Company should be targeting the lowest incentive cost to ratepayers within the range that still achieves the CHP project? If yes, explain how this was achieved in this case. If not, why not? (b) What steps, if any, did the Company take to assure that the incentive offer was not more than was needed to assure the project would go forward?

Response:

The Company exercised its Least Cost Procurement responsibility by establishing CHP incentive levels that target from \$900 per kW to \$1,250 per kW. CHP is one of the most cost effective electric efficiency measures to deliver the Least Cost Procurement objectives. When determining incentives on a project basis, it is necessary for the Company to maintain flexibility in order to motivate a customer to pursue higher efficiency, improve project specifications, and ultimately advance projects. The Company did this within the range of target energy efficiency targets planned for CHP.

- a. Yes, the principles of Least Cost Procurement apply. The Least Cost Procurement law fundamentally says that the Company should invest in energy efficiency when cost effective and lower than the cost of supply. The law then directs the Commission to establish standards which further define these terms. The standards define cost-effectiveness as the RI Test. CHP is one of the lowest cost electric measures on a lifetime basis. To put that in perspective, the Navy's CHP project is estimated to be 0.99 cents per lifetime kWh. The cent per lifetime kWh for the C&I sector in the 2018 EE Plan was 4.7 cents. The Navy CHP project is Least Cost Procurement. Ratepayers will be obtaining enormous benefits from this CHP due to its low costs.
- b. The Company assured that the incentive offer was not more than was needed for the project to move forward by working closely with this customer and advising their technical team on how to make this project qualify for incentives. Throughout the

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process, the Navy indicated that it would find other items for the Solar installer to provide in case the CHP did not qualify for an incentive. There was a thorough exchange of engineering ideas and thoughts on how to make this project work. The Navy, BQ and the Company invested time and resources to this project for more than a year. Additionally, as clarified in the responses to Division 6-8 and Division 6-21, the incentive is very close to the bottom of the range.

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Division 6-23

Request:

The terms of the EE program relating to CHP use the term "target energy efficiency incentive." What is the Company's understanding of the term "target." In other words, in implementing the program, does the company assume "target" means (i) a fixed incentive to which the customer is entitled, (ii) an incentive that is approximate to what should be offered depending upon the circumstances, or (iii) another meaning?

Response:

The term "target energy efficiency incentive" appears in the following text in describing the CHP incentive levels in the 2018 EE Annual Plan, Attachment 2, Bates page 168:

"For cost effective CHP projects, the target energy efficiency installation incentive ("installation incentive") in 2018 is \$900 per net kW, where net is nameplate kW output minus CHP auxiliary kW. For CHP projects with efficiencies of 60% or greater, the target installation incentive in 2018 is \$1,000 per net kW. Wasted energy, back pressure turbines, and extraction turbines are eligible for incentives of \$900/kW."

The incentive level is a target because the Company can offer more or less of an incentive when warranted, for example, to motivate the customer based on specific project aspects. This is most in line with "(ii) an incentive that is approximate to what should be offered depending upon the circumstances." The Company has numerous responsibilities when it comes to customer incentives, including creating energy savings, maintaining cost-effectiveness for the portfolio, and motivating customers to design and build highly efficient projects. Creating targets enables the Company to use the incentive to deliver on those responsibilities.

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Division 6-24

Request:

Did the contractor (BQ Energy) compete in a bidding process in order to obtain the right to locate the solar project on Navy property? If not, explain what process led to the solar lease being granted. If yes, please describe the bidding process and what transpired for BQ Energy to win the bid, addressing the following questions:

- a) When was the RFP issued by the Navy?
- b) When did BQ submit the bid?
- c) Did BQ include the proposal for a CHP project in its winning bid, or was the project added later?
- d) Did the Navy require all bidders to assume the obligation to provide a CHP project or identify the desirability of a CHP project as an option being sought within the RFP? If yes, please explain describe.
- e) If the bid included the CHP project, did the Company have any communications about the availability of incentives with BQ Energy or any other bidders prior to the bids being submitted?

Response:

The Company did not have any insight into the procurement of this project for the Navy and how BQ Energy became the contractor.